



IT Specialist (GS-2210) Competency Model

[Note: The competencies contained in this model are those assessed in the 2004 IT Workforce Capability Assessment Survey in 2004. This model is an appropriate starting point for development of a generic 2210 competency model. Readers are advised that a number of specific-focus 2210 competency models (e.g., IT Security, IT Project Management, IT Program Management) have been developed since 2004.]



A.1 List of General Competencies and Definitions

1. **Administration and Management** - Knowledge of planning, coordination, and execution of business functions, resource allocation, and production.
2. **Contracting/Procurement** - Knowledge of various types of contracts, techniques for contracting or procurement, and contract negotiation and administration.
3. **Customer Service** - Works with clients and customers (that is, any individuals who use or receive the services or products that your work unit produces, including the general public, individuals who work in the agency, other agencies, or organizations outside the Government) to assess their needs, provide information or assistance, resolve their problems, or satisfy their expectations; knows about available products and services; is committed to providing quality products and services.
4. **Decision Making** - Makes sound, well-informed, and objective decisions; perceives the impact and implications of decisions; commits to action, even in uncertain situations, to accomplish organizational goals; causes change.
5. **Financial Management** - Prepares, justifies, and/or administers the budget for program areas; plans, administers, and monitors expenditures to ensure cost-effective support of programs and policies; assesses financial condition of an organization.
6. **Influencing/Negotiating** - Persuades others to accept recommendations, cooperate, or change their behavior; works with others towards an agreement; negotiates to find mutually acceptable solutions.
7. **Interpersonal Skills** - Shows understanding, friendliness, courtesy, tact, empathy, concern, and politeness to others; develops and maintains effective relationships with others; may include effectively dealing with individuals who are difficult, hostile, or distressed; relates well to people from varied backgrounds and different situations; is sensitive to cultural diversity, race, gender, disabilities, and other individual differences.
8. **Leadership** - Influences, motivates, and challenges others; adapts leadership styles to a variety of situations.
9. **Legal, Government and Jurisprudence** - Knowledge of laws, legal codes, court procedures, precedents, legal practices and documents, Government regulations, executive orders, agency rules, Government organization and functions, and the democratic political process.
10. **Managing Human Resources** - Plans, distributes, coordinates, and monitors work assignments of others; evaluates work performance and provides feedback to others on their performance; ensures that staff are appropriately selected, utilized, and developed, and that they are treated in a fair and equitable manner.
11. **Oral Communication** - Expresses information (for example, ideas or facts) to individuals



or groups effectively, taking into account the audience and nature of the information (for example, technical, sensitive, controversial); makes clear and convincing oral presentations; listens to others; attends to nonverbal cues; and responds appropriately.

12. **Organizational Awareness** - Knows the organization's mission and functions, and how its social, political, and technological systems work and operates effectively within them; this includes the programs, policies, procedures, rules, and regulations of the organization.
13. **Planning and Evaluation** - Organizes work, sets priorities, and determines resource requirements; determines short- or long-term goals and strategies to achieve them; coordinates with other organizations or parts of the organization to accomplish goals; monitors progress and evaluates outcomes.
14. **Problem Solving** - Identifies problems; determines accuracy and relevance of information; uses sound judgment to generate and evaluate alternatives, and to make recommendations.
15. **Public Safety and Security** - Knowledge of the military, weaponry, and intelligence operations; public safety and security operations; occupational health and safety; investigation and inspection techniques; or rules, regulations, precautions, and prevention techniques for the protection of people, data, and property.
16. **Strategic Thinking** - Formulates effective strategies consistent with the business and competitive strategy of the organization in a global economy. Examines policy issues and strategic planning with a long-term perspective. Determines objectives and sets priorities; anticipates potential threats or opportunities.

A.2 List of Technical Competencies and Definitions

1. **Accessibility** - Knowledge of tools, equipment, and technologies used to help individuals with disabilities use computer equipment and software.
2. **Artificial Intelligence** - Knowledge of the principles, methods, and tools used to design systems that perform human intelligence functions.
3. **Business Process Reengineering** - Knowledge of methods, metrics, tools, and techniques of Business Process Reengineering.
4. **Capacity Management** - Knowledge of the principles and methods for monitoring, estimating, or reporting actual performance or the performance capability of information systems or components.
5. **Capital Planning and Investment Assessment** - Knowledge of the principles and methods of capital investment analysis or business case analysis, including return on investment analysis.
6. **Computer Forensics** - Knowledge of tools and techniques used in data recovery and preservation of electronic evidence.
7. **Computer Languages** - Knowledge of computer languages and their applications to enable a system to perform specific functions.



8. **Configuration Management** - Knowledge of the principles and methods for planning or managing the implementation, update, or integration of information systems components.
9. **Cost-Benefit Analysis** - Knowledge of the principles and methods of cost-benefit analysis, including the time value of money, present value concepts, and quantifying tangible and intangible benefits.
10. **Data Management** - Knowledge of the principles, procedures, and tools of data management, such as modeling techniques, data backup, data recovery, data dictionaries, data warehousing, data mining, data disposal, and data standardization processes.
11. **Database Administration** - Knowledge of the principles, methods, and tools for automating, developing, implementing, or administering database systems.
12. **Database Management Systems** - Knowledge of the uses of database management systems and software to control the organization, storage, retrieval, security, and integrity of data.
13. **Distributed Systems** - Knowledge of the principles, theoretical concepts, and tools underlying distributed computing systems, including their associated components and communication standards.
14. **Electronic Commerce (e-Commerce)** - Knowledge of the principles, methods, and tools for conducting business online, including electronic data interchange.
15. **Embedded Computers** - Knowledge of specifications and uses of specialized computer systems used to control devices (for example, automobiles, helicopters), including the appropriate programming languages.
16. **Encryption** - Knowledge of procedures, tools, and applications used to keep data or information secure, including public key infrastructure, point-to-point encryption, and smart cards.
17. **Hardware** - Knowledge of specifications, uses, and types of computer or computer-related equipment.
18. **Hardware Engineering** - Knowledge of the principles, methods, and tools for designing, developing, and testing computer or computer-related equipment.
19. **Human Factors** - Knowledge of the principles, methods, and tools used to identify and apply information about human behavior, abilities, limitations, and other characteristics to the design of tools, machines, systems, tasks, jobs, and environments for effective human use.
20. **Information Assurance** - Knowledge of methods and procedures to protect information systems and data by ensuring their availability, authentication, confidentiality, and integrity.
21. **Information Resources Strategy and Planning** - Knowledge of the principles, methods, and techniques of information technology (IT) assessment, planning, management, monitoring, and evaluation, such as IT baseline assessment, interagency functional analysis, contingency planning, and disaster recovery.



22. **Information Systems Security Certification** - Knowledge of the principles, methods, and tools for evaluating information systems security features against a set of specified security requirements.
23. **Information Systems/Network Security** - Knowledge of methods, tools, and procedures, including development of information security plans, to prevent information systems vulnerabilities, and provide or restore security of information systems and network services.
24. **Information Technology Architecture** - Knowledge of architectural methodologies used in the design and development of information systems, including the physical structure of a system's internal operations and interactions with other systems.
25. **Information Technology Performance Assessment** - Knowledge of the principles, methods, and tools (for example, surveys, system performance measures) to assess the effectiveness and practicality of information technology systems.
26. **Information Technology Research & Development** - Knowledge of scientific principles, methods, and tools of basic and applied research used to conduct a systematic inquiry into a subject matter area.
27. **Infrastructure Design** - Knowledge of the architecture and typology of software, hardware, and networks, including LANS, WANS, and telecommunications systems, their components and associated protocols and standards, and how they operate and integrate with one another and with associated controlling software.
28. **Knowledge Management** - Knowledge of the value of collected information and the methods of sharing that information throughout an organization.
29. **Logical Systems Design** - Knowledge of the principles and methods for designing business logic components, system processes and outputs, user interfaces, data inputs, and productivity tools (for example, CASE).
30. **Modeling and Simulation** - Knowledge of mathematical modeling and simulation tools and techniques to plan and conduct test and evaluation programs, characterize systems support decisions involving requirements, evaluate design alternatives, or support operational preparation.
31. **Multimedia Technologies** - Knowledge of the principles, methods, tools, and techniques of developing or applying technology using text, audio, graphics, or other media.
32. **Network Management** - Knowledge of the operation, management, and maintenance of network and telecommunication systems and linked systems and peripherals.
33. **Object Technology** - Knowledge of the principles, methods, tools, and techniques that use object-oriented languages, analysis, and design methodologies.
34. **Operating Systems** - Knowledge of computer network, desktop, and mainframe operating systems and their applications.
35. **Operations Support** - Knowledge of procedures to ensure production or delivery of products and services, including tools and mechanisms for distributing new or enhanced software.



36. **Organizational Development** - Knowledge of the principles of organizational development and change management theories and their applications.
37. **Process Control** - Knowledge of the principles, methods, and procedures used for the automated control of a process, including the design, development, and maintenance of associated software, hardware, and systems.
38. **Product Evaluation** - Knowledge of methods for researching and analyzing external products to determine their potential for meeting organizational standards and business needs.
39. **Project Management** - Knowledge of the principles, methods, or tools for developing, scheduling, coordinating, and managing projects and resources, including monitoring and inspecting costs, work, and contractor performance.
40. **Quality Assurance** - Knowledge of the principles, methods, and tools of quality assurance and quality control used to ensure a product fulfills functional requirements and standards.
41. **Requirements Analysis** - Knowledge of the principles and methods to identify, analyze, specify, design, and manage functional and infrastructure requirements; includes translating functional requirements into technical requirements used for logical design or presenting alternative technologies or approaches.
42. **Risk Management** - Knowledge of methods and tools used for risk assessment and mitigation of risk.
43. **Software Development** - Knowledge of the principles, methods, and tools for designing, developing, and testing software in a given environment.
44. **Software Engineering** - Knowledge of software engineering design and development methodologies, paradigms, and tools; the software life cycle; software reusability; and software reliability metrics.
45. **Software Testing and Evaluation** - Knowledge of the principles, methods, and tools for analyzing and developing software test and evaluation procedures.
46. **Standards** - Knowledge of standards that either are compliant with or derived from established standards or guidelines.
47. **System Testing and Evaluation** - Knowledge of the principles, methods, and tools for analyzing and developing systems test and evaluation procedures and technical characteristics of IT systems, including identifying critical operational issues.
48. **Systems Integration** - Knowledge of the principles, methods, and procedures for installing, integrating, and optimizing information systems components.
49. **Systems Life Cycle** - Knowledge of systems life cycle management concepts used to plan, develop, implement, operate, and maintain information systems.
50. **Technical Documentation** - Knowledge of procedures for developing technical and operational support documentation.



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51. **Technology Awareness** - Knowledge of developments and new applications of information technology (hardware, software, telecommunications), emerging technologies and their applications to business processes, and applications and implementation of information systems to meet organizational requirements.
 52. **Telecommunications** - Knowledge of transmissions, broadcasting, switching, control, and operation of telecommunications systems.
 53. **Web Technology** - Knowledge of the principles and methods of web technologies, tools, and delivery systems, including web security, privacy policy practices, and user interface issues.